

**What is claimed is:**

1. A power supply comprising:
  - a DC-to-DC converter including an output for supplying a voltage to a load, a means for deriving a signal representative of the voltage supplied at the output, and a
  - 5 control circuit for controlling the voltage at the output in dependence upon the derived signal;
  - means for connecting the output to the load;
  - means for deriving a digital representation of the voltage at the load;
  - a processor for deriving a digital correction signal from the digital
  - 10 representation;
  - means for converting the digital correction signal to an analog correction signal;
  - and
  - means for combining the analog correction signal with the derived signal.
- 15 2. The power supply according to claim 1, wherein the means for deriving a digital representation and the means for converting the digital correction signal each have a resolution of at least  $2^{12}$  steps.
3. The power supply according to claim 1, wherein the means for connecting and
- 20 the means for combining comprise resistive elements.
4. The power supply according to claim 3, wherein tolerances of the resistive elements and resolution of the means for deriving a digital representation and the means for converting the digital correction signal are selected such that the voltage
- 25 supplied to the load has a tolerance equal to or better than approximately  $\pm 2\%$ .
5. A power supply comprising:
  - a DC-to-DC converter operable to supply a voltage signal to a load;
  - an analog to digital converter operable to convert the voltage signal at the load
  - 30 into a digital signal;
  - a processor adapted to derive a digital correction signal from the digital signal;
  - a digital to analog converter operable to convert the digital correction signal into an analog correction signal; and

voltage regulation circuitry that, responsive to the analog correction signal, controls the voltage signal.

6. A method for controlling an output voltage provided by a power supply to a  
5 load, the method comprising:
- converting a voltage signal supplied by the power supply to the load into a digital signal;
  - deriving a digital correction signal from the digital signal;
  - converting the digital correction signal into an analog correction signal; and
  - 10 responsive to the analog correction signal, regulating the voltage signal via a feedback control circuit.